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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/789,907	02/27/2004	Bruce David Terris	HSJ920030266US1	8872

44425 7590 07/13/2005
THOMAS R. BERTHOLD
18938 CONGRESS JUNCTION COURT
SARATOGA, CA 95070

EXAMINER

KAPADIA, VARSHA A

ART UNIT PAPER NUMBER

2651

DATE MAILED: 07/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/789,907

Applicant(s)

TERRIS ET AL.

Examiner

Varsha A. Kapadia

Art Unit

2651

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2/27/05
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

Art Unit: 2651

Information Disclosure

The information disclosure statement (IDS) submitted on 2/27/04 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Rejection Under 35 U.S.C. 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mallary (6,842,313) in view of Lille et al (2005/0018348 A1)

With regards to claim 1, Mallary discloses a head for recording in tracks of a perpendicular magnetic recording layer (see figs. 2-4 and disclosure thereof) comprising:

A head carrier ... (see fig. 1 element 32 and fig. 4 element 102); a write pole ... (see figs. 2 and 4 elements 68 and 126 respectively and disclosure thereof); a shield ... (see figs 2-4 elements 72, 104 and 110 and disclosure thereof and paragraphs [0015] and [0016].

With regards to claim 1, Mallary fails to further disclose a resistive heater layer as recited in the claim by the applicant.

Lille et al however discloses the resistive heater as claimed see abstract, and figs. 4-10 element 130 and disclosure thereof.

Art Unit: 2651

It would have been obvious to one of ordinary skill in the art at the time this invention was made to modify the perpendicular recording head disclosed by Mallery with the above teachings of Lille et al to provide a thermally assisted head including a heater for heating the medium to temporarily reduce the coercivity of the medium such that the head is able to record data bits and to increase the recording density.

With regards to claims 2-4, Mallery discloses side shields located opposite sides of the write pole and the trailing shield having an end spaced from the write pole tip (see elements 104, 110 and 72 disclosure thereof and col.10 lines 19-23).

With regards to claims 6-7 and 9, Mallery discloses a return pole on the trailing surface for providing a return path for magnetic flux from the recording layer (see element 114 disclosure thereof and col.3 lines 40-60; wherein Mallery also discloses conductive coil as recited in claim 9).

With regards to claim 10, Mallery discloses that the head carrier is an air bearing slider as claimed (see element 32 and disclosure thereof).

With regards to claim 11 Mallery also discloses magnetoresistive head sensor on the trailing surface (See element 62 and disclosure thereof).

With regards to claims 5 and 8, Lille et al discloses the specific location of the heater with respect to pole tip and shield as claimed (See fig. 10 disclosure thereof and paragraphs [0035] and [0036]. Lille et al is relied upon for the same reasons as indicated above in this office action.

With regards to claims 12-24, the thermally assisted recording head comprising limitations recited in claims 12-24 are similar to those described above in this office action with

Art Unit: 2651

respect to claims 1-11 and therefor the rejection applied to claims 1-11 is also applied to claims 12-24 respectively for the same reasons of obviousness. Claim 19, Mallary further discloses a magnetic recording disk drive comprising a perpendicular magnetic recording disk...(see the paragraph bridging cols. 6 and 7, fig. 1, element 14 and disclosure thereof).

Prior Art Cited

Reference to Payne (2005/0094315A1) cited as of interest.

Reference to Macken et al (2004/0075944) cited as of interest.

Reference to Kawato (6,906,898) cited as of interest.

Reference to Cohen (5,673,163) cited as of interest.

Reference to Santini (2004/0223257A1) cited as of interest.

Reference to Shukh (2004/0240108A1) cited as of interest.

Reference to Le (2005/0024771A1) cited as of interest.

Reference to Albrecht et al (2005/0122612A1) cited as of interest.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Varsha A. Kapadia whose telephone number is (571)272-7557.

The examiner can normally be reached on Mon Tue and Thurs. from 6:30 AM to 2:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on 571 272 7843. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2651

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

VK



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